

US Appl. Serial No. Unassigned  
HISTOPLASMA CAPSULATUM CHITIN  
SYNTHASE SEQUENCES AND THEIR USE FOR  
DETECTION OF HISTOPLASMA  
CAPSULATUM AND HISTOPLASMOSIS  
Inventors: JOHNSON, et al.  
Express Mail No. EV 316331604 US

SEQ. ID NO: 9

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1  CGCAAATCAG CAACTGATCC GACCGCACGA TGATGGCCCA TCGACGCTTC
51  CCCCTGTGCA GATGATGTTC TGCTTGAAAC AAAAGAACAG TAAGAAAATC
101 AACTCTCACA CATCCCTOTT CAATGCCTTT GGCCGAATCC TCAACCCGGA
151 AATCTGCATC TTGCTCGACG CGGGTACGAA GCCGGGTCAT AAATCCCTCC
201 TGGCACTGTG GGAAGCCTTC TATAACGACA AAGATCTGGG CGGCTCGTGC
251 GGCAGAAATCC ACGCTATGTT GGGCAAAGGC TGGAAAAACC TCATCAACCC
301 TCTTGTTGCA GCGCAAACT TCGAATACAA AATCAGTAAC ATCCTGGATA
351 AACCTCTGGA ATCCTCCTTC GGCTACGTCA GCGTGTTGCC CGGTGCCTTC
401 TCTGCCTACC GCTTCCGTGC AATCATGGGC AGACCTCTCG AACAGTACTT
451 CCACGGTGAC CATACTCTCT CCAAACAACT CGGTCCCAAG GGTATCGAGG
501 GCATGAACAT TTTCAAGAAG AACATGTTCT TGGCCGAGGA TCGGATTCTG
551 TGTTTTCGAAC TCGTGGCCAA GGCCGGGTCC AAATGGCATC TGTCTACGT
601 CAAGTCGTCC AAGGGCGAGA CTGACGTGCC CGAGGGAGCC CCCGAATTCA
651 TCGGCCAGCG TCGTCGGTGG CTCAACGGCT CGTTCGCAGC TAGTATCTAC
701 TCATTGATGC ATTTTGGCCG AATGTATAAG AGCGGCCATA ACCTTCTGCG
751 CATGTTCTTT TTCCATATTC AGATGATCTA CAATACGTGC ACCGTTATCA
801 TGACTTGGTT TGCCTTGCT TCATACTGGC TCACAACTTC CGTCATCATG
851 GACCTCGTCG GAAACCCCTCC CGCTCCAGAA TCTGGCAGCA CGCAGAGGGC
901 ATTCCCATTC GGCAATACCG CCACTCCGAT TGTCAACACT GTTCTGAAGT
951 ACTTGATCTT GGCCTTCCTG CTCTTGCACT TTATTTTGGC TTTGGGTAAC
1001 CGGCCTAAAG GATCTAAACA CTCGTACATC ACCTCCTTCG TCGTATTCGG
1051 CATTATCCAA TTGTACATCA TTGTCTTATC CATGTACCTC GTCGTCCGCG
1101 CCTTCAGCGG TGGCACACTC GCCTTCACAA CAGACAAAAG TATCGGCGAA
1151 TTCCTCAAGT CCTTCTTCAG TTCCGAAGGA CCGGGAATCA TCATCATCGC
1201 CCTCGCCGCT ACCTTCGGCC TATATTTCGT CGCTTCTTTC ATGTACCTTG
1251 ACCCTTGSCA CATGTTACAC TCCTTCCCGG CCTACCTCCT GATCATGTCC
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FIG. 1A

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TOPLASMA CAPSULATUM CHITIN  
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DETECTION OF HISTOPLASMA  
CAPSULATUM AND HISTOPLASMOSIS  
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1301 TCGTACATCA ACATCCTGAT GGTCTACGCC TTCAGCAACT GGCACGATGT  
1351 GTCGTGGGGC ACAAAGGGTG CGGACAAAGC CGACGCTCTG CCCTCTGCCC  
1401 AAACGCAAAA GGAAGACGAC GGCAAAGCTG CTGTGATCGA GGAGATCGAC  
1451 AAGCCGCAGG CGGATATCGA CAGCCAGTTT GAAAGCACTG TGAACCGTGC  
1501 GCTGACGCCG TACGTGGAGC CAAAGGTGAA GGAGGGGAAG TCGCTAGATG  
1551 ATTCTGTATAA GAGTTTCCGC ACGCGGTTGG TGACGCTATG GCTGTTTTCG  
1601 AATGGCATTG TTGCCGTGGC CATTACCAGC GAGGATGTGA ACAAGTTTGG  
1651 ATTCACGTCC CGAGCAACCA GCCGAACCAC GCATTTCTTC CAGGCTCTCC  
1701 TTTGGGCGAC CGCAGCGCTC TCCCTCATCC GCTTCACCGG CGCATGCTGG  
1751 TTCCTTGCCC GGAAGTGAAT TATGTGCTGC TTCGCGAGAA GATAGTCAGT  
1801 CCATTTGGCT CTGGATTTTC TATATATTTT GTTTGGTGAT GCAAAAATCT  
1851 TTTGCTTCCC TTTTTCCTTT TCTCTTTCGG GTGACCTTTT TGTGCGGGC  
1901 GACGGCACGA AACC CGGAAT AATATAAGAC AAGGATGGGG GAGAAGAGAG  
1951 CATGAAGATC GAAGATCGAA AGTCGAAAGT CGAAAATTGA AAGGAGAAGA  
2001 AAGGAAATGA CAAGAACTG GCAGCTGCCG CTTGGCCAAC TGTGGAAGG  
2051 TTTTCTTTT GCATTTCTAT GAATATGTCC CGATTTTGTT TTTCTTTTCC  
2101 CATTGCTTGT TGTCTTTTTC GCTTTTTTTCG ATTCCTTTCC TATAATAATG  
2151 GCAAGATGTG TCCTATTTCC TCCTGCCTGG CCTCTCTTTT GTGTGTTTCT  
2201 ATATGCGTGA GAGCCTCTGA ATTCCGAATC TAATGTTCTG TTTGTTGTCT  
2251 T

FIG. 1B

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SEQ ID NO: 10

TGCTTTTTTTGAAGGTTCTACCCTTAGCCCAAAGTCCGGCTTTCCNCTTNT  
TTTCTTTTTTTTCTTTTTTGGACNAGGACCATGGATCCCCCCCCCATNCATCG  
GGTCCNGAGAGAAGATGGTCCAAATATTCTTAAACTATCTTGATCCCTTGT  
AACCCAATGTCCCCAATCGGCTTCCCAAATTTGGCCAACAATTCCAATTTTC  
NACCCCCCACNAGCGGGAGTAATGGAGCAACNATGCAAACCCGAACCCCN  
TGCAACGGTTCCCCAAAAGCCACCCCTCTGAACAGTGATTGACAAATCGG  
TGCAAGGCATTGCTCACGGGGTACTCACCTGAACAATCGACACGGCATAAA  
TGTTGGTGGATGGCAAGACAATTAATTCATCTTCATTGAGCTTTATTTGTT  
TATTCCCAGCCATTACAAAAACCAAAGTCCAAAATTCAAAAATCAGGG  
CTTGGTTTTGCCTCCCCATTTTGGCCCTGAATAACGGGAAGGTTAGTTACA  
TAGTAAAAGTAAAACCGTGTTGAACAAAAGTTTCGAGGATCGCAACCAGAC  
AAATTGGACCAGGATCTCTTGACTTCCCGTCTTTCGGCTAAGAATAGACTT  
TTTTTGGGGCAACGAAATTCTGGTACAACCTTTTGATTTCTGGCGGGTTTCA  
GATATGTGGGGACATTATCGGGAATGATAAATTTTTTTTTTTTTTTTTTG  
GACTGCTCTCAAACCTCATGTGATAATATCACAGACAATAGGTATCGCAAGC  
GAGCATCTTGACTTGACTGCTGAGAAGTGATCTTGTCGCTGCAATTGGTGG  
AGGCGACTAACAGACGAACAGCCTCGCAGGATGCATGCATGAATACAGCAA  
GTCGCTGCAGAGGTCATCACATTATGATGTCCTCCACGCCCGTTTTCTTCTC  
CTTCAGATACACCCATCCATCCATATGCATATACATATACATATACATATG  
TGTCGTGATGTGACGGTGCCGCGCGCAGTATGAATGATTCGCTGCCTCTAA  
GTATGGGACAAGTAAGTATGTACTGTACATATACGTATGTCTGTCTGTCTG  
TCTGTCTGTCTGTCTGTATGCAGTCCAACCTGTGGACAAAGCCCTCGCGGCA  
ACGTTCAAAGCGGCGGAGACAAGAGAAGAAGGTGAAATTAAACTGAGTAGAT  
GGCAGAATCGCCGCCATGTCTCCCTTTCCTTCCGGCTAGAGGAGGCAGAGG  
AAAGGCTGATTGAGCGAGTGGGGGGGAGCATTATTTATCCACCCTGAGCTGG  
GCTGGGCCTGGGCGGAGAGTACCATTGAGTAGAGTTGTGAACTGTGGTCT  
ATGCTCGATGGAAGCAACGTACCTGGCTTACCTGGCTCACCTGGTTGAAA  
TCCAAACGGCGAGTATATATCCATATCCAGATATGTGCGCATGTTGAATG  
GTGGCGATTAATCGGATGTCCATGTCAATCTCCTTTCTCGGCAAAATATAT  
ATCTACCTACTTGTATGGTAATGTGTATCCCACCCTTACCAAACGCGGCTG  
AACAAAGAAAGTTACGGTAAATTTACGCTAGTACCCAGCCAGAAGCTGGG  
TACGGCTCCTGTGCTCTGTACAGTCCGGCCATACCATAACCATACCG  
TACCATAACCGTACCATATCACGTTTCATCCACCCGTTTGCCCCAAGAGAAA  
TATCATCATCGCCTTTTCGGGCCTGTAGCTTACTTTCTTTTTTCTATTTT

FIG. 2A

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TTTCTTTTCTATTTCTATTTCTATTTCTATTTCTATTTCTGCTGCTTATTAT  
TCTCGCCTGTTGGTCTTGTCCAGCAAGCCTGGGAATATCAAGCGCTCGTCT  
GTGGTTTGTATTTTATCCGTTGCCCTGCTTTGTGTCCCGCTGCCCCCTTAGC  
TCCCTGTGGCTTCGCTGCCCCCTAAAAACAATCATCTTCTTCTTCCGCTG  
CTCTGTTCTCGCTCGTCTCTCTTCTCTCTTCTCTTTTCTCTGCCTCTCTTC  
CTCCTCTCGATCCATCCATCTATTCTCCCCCTCTATCCTTCTATCCGCTTCA  
TCAACCCAGCCTCTCGTTTTTGACGGCGGCCACAGCTCCCTCATCATGGCCT  
ATCCAGGCTCGAACTCTCCAGGGGGGTACGGCGATGGCCATCGACTCCATG  
ACCTCCCATCTGGCAGCGTGAGAAAACACTCTTTCCTATGTATATGCATAT  
GATATAGATATAGATATAGGTATACATTTATATACATATATAAGAGAGCGT  
GTGTGTCTGTGTGTGTGTCTGTTTTGTGTGTGTGTATCTGTCTGTATATAT  
ATACACATCGATATATATATGCTTTTGGCTACGTATTCAAGCACTGGTTCC  
CCCTGGTCCGCGGCCACGGTACCAGTGGTTTCAGGATGATATCCTCTCAAC  
ACAGGAACCACCCCTTGCTAACTTGCCCCCTTAAATCGCTCCAGCAATATAA  
TCTTCCCGCCGAACACGATGCCTCCCAATCGCTCCTCCACCAAACCAAGG  
CCCATTCAGCGGCCCTTTGATGACCCCAACACCACCAACCGCGGTGGCTC  
TCCTGTCCGATCCCCCTCCAGATACAGCCTGACAGAATCCTACGTAACCGA  
CCATCCCAAGCTCAAGACCACTACGGCGGCCAAATGGAAAATCCCGCCGC  
TGGCTTTGGTGTTCCTCGGTCCGGTTCCGTCCCCCTATACCCGCAGTGAGAC  
CTCCTCCACGGAGGCCTGGCGTCAGCGACAGGCGCCCGGCAATCTGCGCCG  
TTATGCCACCAGGAAAGTCAAACCTTGTTCCAAGGCTCTGTTCTCAGTGTGCA  
TTATCCCGTTCCCGAGTGCTATTCAGAATGCCGTGCAGGCTAAATACCGCAA  
TGATCTCGAAGGTGGTAGTGAGGAATTCATCATATGCGATGTAGGTTTTT  
GTCCTTGATTTCTTTTTCTTTTTACTCCCCCTCTGCTTTGGTTTATGGTCGT  
CTCCTTGCTGATTTGCTGCTGCCATCTTAGACACCGCCGCTACCTGTGATC  
CCAACGAGTTCACTCTGCACAATGGGTACAATCTGCGCCCGGCGATGTATA  
ACCGTCATACCGAACTGCTGATTGCTATTACCTATTACAATGAAGACAAAA  
TGCTTACTTCGCGCACCCCTGCACGGCGTAATGCAAATATCCGTGACATTG  
TGAACCTCAAGAAGTCCGAGTTCTGGAACAAAGGTGGACCTGCTTGGCAGA  
AAATCGTTGTCTGTCTGGTCTTCGATGGAATCGACCCTTGCGACAAAGACA  
CCCTCGACGTGCTGGCCACAATTGGAATCTACCAGGATGGCGTGATGAAAA  
AAGATGTCGATGGAAAGGAAACCATCGCCACATTGTGAGTACATATATGA  
TACCCGTAGCCCAATTTTTTGCACCTTCTACTACTGCTACACTGTACTAAC  
TTCCCGTCTAGTTTGAATACACCACCACTCTCAGTCACCGCAAATCAGC  
AACTGATCCGACCGCACGATGATGGCCCATCGACGCTTCCCCCTGTGCAGA

FIG. 2B

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TGATGTTCTGCTTGAAACAAAAGAACAGTAAGAAAATCAACTCTCACAGAT  
GGCTGTTCAATGCCTTTGGCCGAATCCTCAACCCGGAAATCTGCATCTTGC  
TCGACGCGGGTACGAAGCCGGGTCTATAAATCCCTCCTGGCACTGTGGGAAG  
CCTTCTATAACGACAAAGATCTGGGCGGCTCGTGCGGCGAAATCCACGCTA  
TGTTGGGCAAAGGCTGGAAAAACCTCATCAACCCTCTTGTTGCAGCGCAAA  
ACTTCGAATACAAAATCAGTAACATCCTGGATAAACCTCTGGAATCCTCCT  
TCGGCTACGTCAGCGTGTGCCCCGGTGCCTTCTCTGCCTACCGCTTCCGTG  
CAATCATGGGCAGACCTCTCGAACAGTACTTCCACGGTGACCATACTCT  
CCAAACAACCTCGGTCCCAAGGGTATCGAGGGCATGAACATTTTCAAGAAGA  
ACATGTTCTTGGCCGAGGATCGGATTCTGTGTTTCGAACTCGTGGCCAAGG  
CCGGGTCCAAATGGCATCTGTCCTACGTCAAGTCGTCCAAGGGCGAGACTG  
ACGTGCCCCGAGGGAGCCCCGAATTCATCGGCCAGCGTCGTCGGTGGCTCA  
ACGGCTCGTTCGCAGCTAGTATCTACTCATTGATGCATTTTGGCCGAATGT  
ATAAGAGCGGCCATAACCTTCTGCGCATGTTCTTTTCCATATTCAGATGA  
TCTACAATACGTGCACCGTTATCATGACTTGGTTTGGCCTTGGTATGTGTT  
GTTCAACAATATAAGTCTTTGTTCCCTCCGAACAATGACATCCCTCTTTCAA  
CTTCCACTTTCTTCTTGCGTCTATTGTCTCCCAACACTAACATGTTCTAGC  
TTCATACTGGCTCACAACCTCCGTCATCATGGACCTCGTCGGAAACCCTCC  
CGCTCCAGAATCTGGCAGCACGCAGAGGGCATTCCCATTCGGCAATACCGC  
CACTCCGATTGTCAACACTGTTCTGAAGTACTTGTATCTGGCCTTCCTGCT  
CTTGCAGTTTATTTTGGCTTTGGGTAACCGGCCTAAAGGGTGAGTTTGCAT  
AATCTCCTAGTCAACTAAGGGGAGCTTCAGAAATATCCAATTCGTGGCATT  
GTTATTTTCATTGCCCTTCTCCCCGGCGAGATTCCCGGCGCTGAGCTCCGA  
TATATGCGTTAGATGATACTGATAGCGCCCCTCAGATCTAAACACTCGTAC  
ATCACCTCCTTCGTGCTATTTCGGCATTATCCAATTGTACATCATTGTCTTA  
TCCATGTACCTCGTCGTCCGCGCCTTCAGCGGTGGCACACTCGCCTTCACA  
ACAGACAAAGGTATCGGCGAATTCCTCAAGTCCTTCTTCAGTTCCGAAGGA  
CCGGGAATCATCATCATCGCCCTCGCCGCTACCTTCGGCCTCTATTTTCGTC  
GCCTCTTTTCATGTACCTTGACCCCTGGCACATGTTACCTCCTTCCCGGCC  
TACCTCCTGATCATGTCCTCGTACATCAACATCCTGATGGTCTACGCCTTC  
AGCAACTGGCACGATGTGTCGTGGGGCACAAAGGGTGCGGACAAAGCCGAC  
GCTCTGCCCTCTGCCCAAACGCAAAAGGAAGACGACGGCAAAGCTGCTGTG  
ATCGAGGAGATCGACAAGCCGCAGGCGGATATCGACAGCCAGTTTGAAAGC  
ACTGTGAAGCGTGCGCTGACGCCGTACGTGGAGCCAAAGGTGAAGGAGGGG  
AAGTCGCTAGATGATTCTGTATAAGAGTTTCCGCACGCGGTGGTGACGCTA  
TGGCTGTTTTTCGAATGGCATTCTTGCCGTGGCCATTACCAGCGAGGATGTG  
AACAAAGTTTGGATTACCGGTAGGCCTTACTTTCTTTTTTCCCCCTTCCTC

FIG. 2C

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TTTTTTTTTTTTCTTTCGCCTTTTGGGGAAAAAAAATAAAAAATAA  
AAACACTTTGCTAACGTGTTCTCCCAATCCAGTCCCGAGCAACCAGCC  
GAACCACGCATTTCTTCCACGCTCTCCTTTGGGCGACCGCAGCGCTCTCCC  
TCATCCGCTTCACCGGCGCATGCTGGTTCCTTGGCCGGACTGGAATTATGT  
GCTGCTTCGCGAGAAGATAGTCAGTCCATTTGGCTCTGGATTTTCTATATA  
TTTGTGTTTGGTGATGCAAAAATCTTTTGCTTCCCTTTTCTCTTT  
CGGGTGACCTTTTGTGTCGGGCGACGGCACGAAACCCGGAATAATATAAG  
ACAAGGATGGGGGAGAAGAGAGCATGAAGATCGAAGATCGAAAGTCGAAAG  
TCGAAAATTGAAAGGAGAAGAAAGGAAATGACAAGAACTGGCAGCTGCCG  
CTTGGCCAACTGTTGGAAAGTTTTCTTTTGCATTTCTATGAATATGTCCC  
GATTTTGTTTTTCTTTTCCCATTTGCTTGTTGTTCTTTTCGCTTTTTTCGAT  
TCCTTTTCTATAATAATGGCAAGATGTGTCTTATTTCTCCTGCTGGCCT  
CTCTTTTGTGTGTTTCTATATGCGTGAGAGCCTCTGAATTCCGAATCTAAT  
GTTCTGTTTGTGTTCTTATTTCTCTGATCGTCCCCGCCCCCTGGTGTTTTT  
GTTGCTGCTGTTCTTGCTGTTACTGCTTTTTCTGTTTCTGGGTTTTTCCCT  
TGTTGTGTAAATTTACTATATCCTACCTAGATGACTTTTTTTTTTTTTATT  
TTCTTTTTTCGCTCTCCGCCTCTTCTGCAAATGATGTAGCTAATTGGCTGAT  
ATGATTGGAATGAATTGAAGGCATTTACTTTTCGAATCCATTTATTGACGG  
CTGTAGCCTGTAGCCTGTAGCCTTGACTGCGTATGTACATGTATATTATG  
GAGTTCACCCGCCAAACCACAGCTCGGGCCGTTGGGCAATCAGCCGTGTCA  
CGTGCACTCGGCTCCCCTGCCCGATGCATCAGCGTCATTCCTCATCCTATC  
CCCGTCTTGGAATCCTCCCAGGCCTCACTCCCCATCCGCCAACCTTTGCAC  
AACGCCGTTACTCTGCACTCTGACTGCTTGTCCGTCCGCCCCGCCCCGTGAGC  
CCTCGTTCCGCTCCCTTTTCGGCCCCCTTTTTGTTTTGCCCCCTTCACGGTCC  
CAAAAGAAATCTTATCTTATCACGGCACACCAACACCACTGTCTGTGTACT  
GTACATGTACATACACACCCAGCCCCCGCCTCGCATCTCAACGACAGCA  
TAAACAACCCCAAGCCAGTTCCACTTGGCTTCTCTTCCCCGTAGTTTGTG  
TCCCGCTCTATCTCCCTCGGGCCTCCGTGCTTGGACCATAAACCGTCGGCC  
TGCTGCGGAGACTCTCCGTGATCGAAAGCCTCGCCCGCTCCCCGCCCTC  
TTCTTCCCCCTCCCCTCCTCTGCACCTCGATTTACCTGGTACGGACCTTCC  
TGCCGTCTTCTGTCTTCAATACAGCTTCCTCTTTGTCTCCCGTCCAGAC  
CAAGTCAGGAAGAGACACGACCTGGTACTAGTTCTGTGTGGGGTCTCAGTT  
GGAAGTGGGAAGCTTCCGGACTTGGTGACGGTTACACCTTTCTTGCGTCTTG  
GGCTCTCCTTTTTTTTTTTTTTTTTTTTTTTTGTCTTAAAAAATTTT  
TCCTTTTGGTTCCTTTACGTTACGGCGCAAAGTAAAGTTATCAGGAGGA  
CAAAAGGAGGTTGCTTTGTGCGGGAATGCAAGAGTAGGAAGGGGAAATTA

FIG. 2D

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CAAGAACAGAAGAGACGAGAGAAGAGCGATTCTGGGCATAACAAGCTTGGC  
ACTTGTCAATTATCTGGTACCCTTGCCATATATTTGCACATTTGCACATATAC  
GCTTTTTTATTTTCGGTGATTGACCGAGGGGCGTTCCTCTTTCACGATGTTGA  
AGATATTGTCTATGGTAGGTCAAACCTTTATTCCGTTGTTGTTAATTAATGG  
TTATCAGCTCCTCCCCCTTTTCTCCGCCTAATGGCGCCTCCTATATTTTAAT  
AGAGATGCCGAATACACAGGCAATCAGCTGACTCTGTGCTGCAGAAAAAGA  
AGCAACAAGCGGAGGCTGCTGCTGCTGGGCAGACCAAGAATAGGGTCGGAG  
GTGCGAAAGCACGGATTCAACATGGTACGTTCCGCCAGCATCGCTTCCCTC  
TTGTGATAAAATGCGAAACACTTCTCCAATGGAATGGGCTAACTGTCAGCT  
TCGTCCTTCTCACCTTTCACAGATCTTCTCCGGGTCGGGAAACAGGAGGAG  
GAGGAGAGCCGCACGGGTGCACGCCCCATTAAATTCGAGTGGAAGAATGGC  
GATGATCCGTTTCATTTTAGTGTGGTGATCGAACCGGACGAGGGGATGTAC  
AAGGGTGGCTCGTTCAAGTTCAATTTTGACATTCCCGAACACGACTACCCG  
TTTGAACCGCCCAGAGTAAAATGCACCCAGCGGATATACCACCCGAACATC  
GACCCGCAAGGAAATGTGTGTCTGAACATACTGCGTGATGGGTGGACAGCC  
GCGTTGGATGTCCAGGCCGTTGCATTTGGCTTACTGGTGCGTTATCCTCTC  
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AACTAACGCCAGCATGCCAAAACGAAACAGCACATATTCATCCACACCACG  
TACGAAGACCCCTTAATCCAAGAAGTCGCTGACGACCTTCGGCTGAACCGT  
GAGGGCTTCCGACGCAACGTTCCGACAGCCATGCAGGGGGGGACGGTCCGG  
AATACACAATACGATCGTGTCTTGAAGAGCTGAGATGGGTCTGAAGGGGAGG  
TGATCTACTATACCATGGATGCAGTGGTAGTGGTGGTGGTGG

FIG. 2E

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### Chitin Synthase Gene Intron Sequences

Intron 1 (2162 to 2443) (SEQ ID NO: 1) (282 bp):

GTGAGAAAACACTCTTTCCTATGTATATGCATATGATATAGATATAGATATAG  
GTATACATTTATATACATATATAAGAGAGCGTGTGTGTCTGTGTGTGTCTG  
TTTTGTGTGTGTGTATCTGTCTGTATATATATACACATCGATATATATATGCTT  
TTGGCTACGTATTCAAGCACTGGTTCCTGCGCGGGCCACGGTACCAGT  
GGTTCAGGATGATATCCTCTCAACACAGGAACCACCCCTTGCTAACTTGCCC  
CTTAAATCGCTCCAG

Intron 2 (2901 to 2991) (SEQ ID NO: 2) (91 bp):

GTAGGTTTTTGTCTTGATTTCTTTTCTTTTACTCCCCTCTGCTTTGGTTTAT  
GGTCGTCTCCTTGCTGATTTGCTGCTGCCATCTTAG

Intron 3 (3354 to 3431) (SEQ ID NO: 3) (78 bp):

GTCAGTACATATATGATACCCGTAGCCCAATTTTTTGGAACTTGTACTACTGC  
TAACTGTACTAACTTCCCGTCTAG

Intron 4 (4279 to 4387) (SEQ ID NO: 4) (109 bp):

GTATGTGTTGTTCAACAATATAAGTCTTTGTTTCTCCGAACAATGACATCCCT  
CTTCAACTTCCACTTTCTTCTTGCGTCTATTGTCTCCCAACACTAACATGTTT  
TAG

Intron 5 (4582 to 4730) (SEQ ID NO: 5) (149 bp):

GTGAGTTTGCATAATCTCCTAGTCAACTAAGGGGAGCTTCAGAAATATCCAA  
TTCGTGGCATTGTTATTTTCATTGCCCTTCTCCCCGGCGAGATTCCCGGCGCTG  
AGCTCCGATATATGCGTTAGATGATACTGATAGCGCCCTCAG

Intron 6 (5377 to 5495) (SEQ ID NO: 6) (119 bp):

GTAGGCCTTACTTTCCTTTTTTCCCCCTTCTCTTTTTTTTTTTCTTTCGCCTT  
TTGGGGAAAAAATAAAAAAATAAAAACACTTGCTAACGTGTTCTC  
CCACAATCCAG

FIG. 3



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1 MAYPGSNSPG GYGDGHRLLD LPSGSQYNLP AEHDASQSLH HQNQGPFGSP  
51 FDDPQHHRG GSPVRSPRY SLTESYVTDH POAQDHYGGQ MENPAAGFCV  
101 PGRVPSPYTR SETSSTEAWR QRQAPGNLRR YATRKVKLVQ GSVLSVDYPV  
151 PSAIQNAVQA KYRNDLEGGS EEFTHMRYTA ATCDPNEFTL HNGYNLRPAM  
201 YNRHTELLIA ITYYNEDKML TSRTLHGVMQ NIRDIVNLKK SEFWNKG GPA  
251 WQKIVVCLVF DGIDPCDKDT LDVLATIGIY QDGVMMKKDVB GKETIAHIFE  
301 YTTQLSVTAN QQLIRPHDDG PSTLPPVQMM FCLKQKNSKK INSHRWLFNA  
351 FGRILNPEIC ILLDAGTKPG HKSLALWEA FYNDKDLGGS CGEIHAMLGK  
401 GWKNLINPLV AAQNFYKIS NILDKPLESS FGYVSVLPGA FSAYRFRAM  
451 GRPLEQYFHG DHTLSKQLGP KGIEGMNIFK KNMFLAEDRI LCFELVAKAG  
501 SKWHLSYVKS SKGETDVPEG APEFIGQRRR WLNGSFAASI YSLMHFGRMY  
551 KSGHNLLRMF FFHIQMIYNT CTVIMTWAL ASYWLTTSVI MDLVGNPPAP  
601 ESGSTQRAFP FGNTATPIVN TVLKYLYLAF LLLQFILALG NRPKGSKHSY  
651 ITSFVVFHII QLYIIVLSMY LVVRAFSGGT LAFTTDKGIG EFLKSFFSSE  
701 GPGIIIIALA ATFGLYFVAS FMYLDPWHMF TSFPAYLLIM SSIYINILMVY  
751 AFSNWHDVSW GTKGADKADA LPSAQTQKED DGKAAVIEEI DKPQADIDSQ  
801 FESTVKRALY PYVEPKVKEG KSLDDSYKSF RTRLVTLWLF SNGILAVAIT  
851 SEDVNKFGFT SRATSRTTHF FHALLWATAA LSLIRFTGAC WFLGRTGIMC  
901 CFARR\*

FIG. 4

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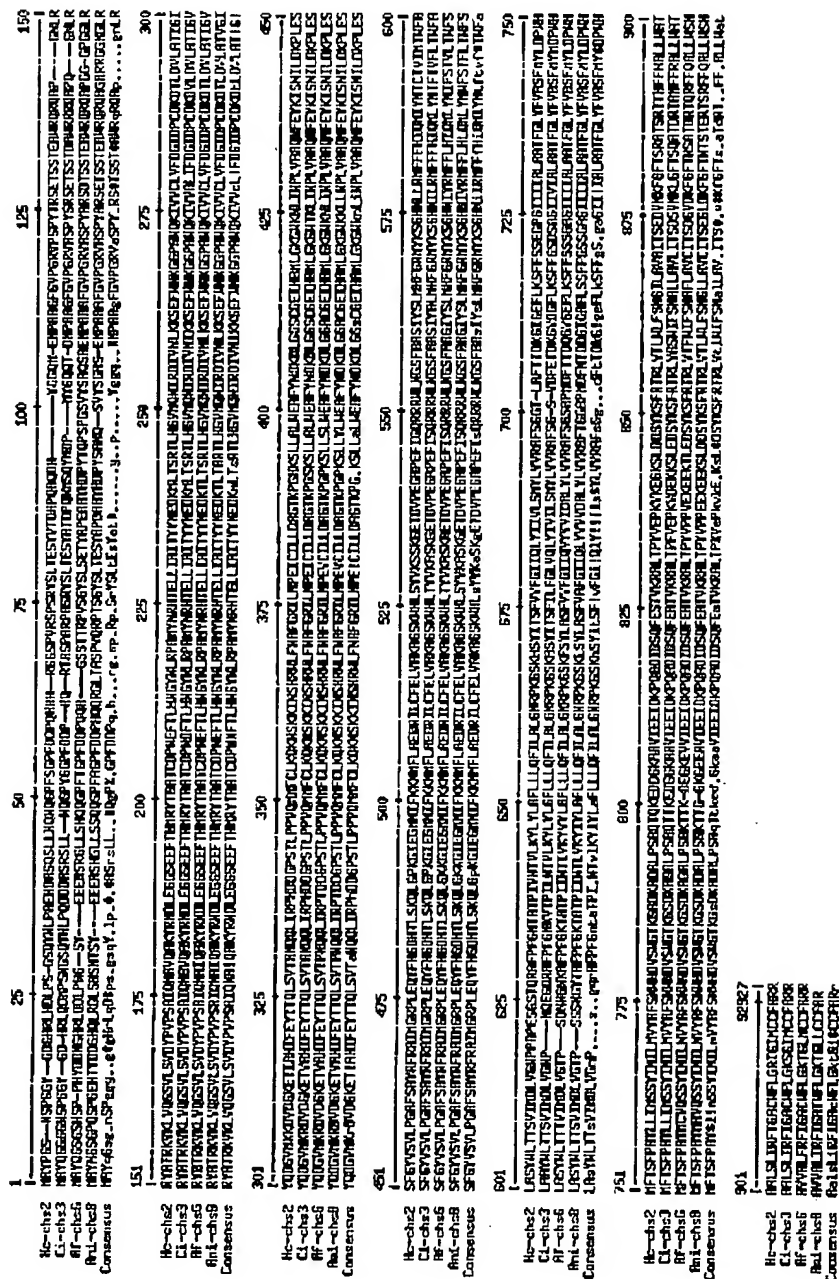


FIG. 5

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**Chitin Synthase Intron 1 primers**

Intron 1 5' primer sequence (SEQ ID NO: 7):

CACTCTTTCCTATGTATATGC

Intron 1 3' primer sequence (SEQ ID NO: 8):

CGATTTAAGGGGCAAGTTAGC

**FIG. 6**

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SYNTHASE SEQUENCES AND THEIR USE FOR  
DETECTION OF HISTOPLASMA  
CAPSULATUM AND HISTOPLASMOSIS**  
Inventors: JOHNSON, et al.  
Express Mail No. EV 316331604 US

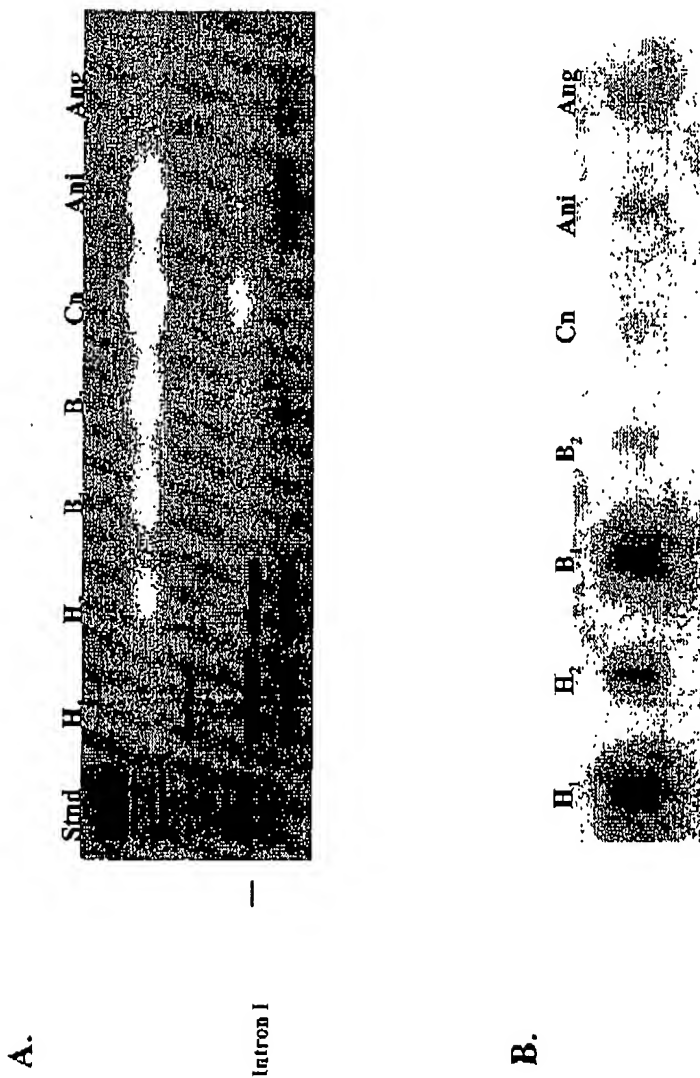


FIG. 7

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HISTOPLASMA CAPSULATUM CHITIN  
SYNTHASE SEQUENCES AND THEIR USE FOR  
DETECTION OF HISTOPLASMA  
CAPSULATUM AND HISTOPLASMOSIS  
Inventors: JOHNSON, et al.  
Express Mail No. EV 316331604 US

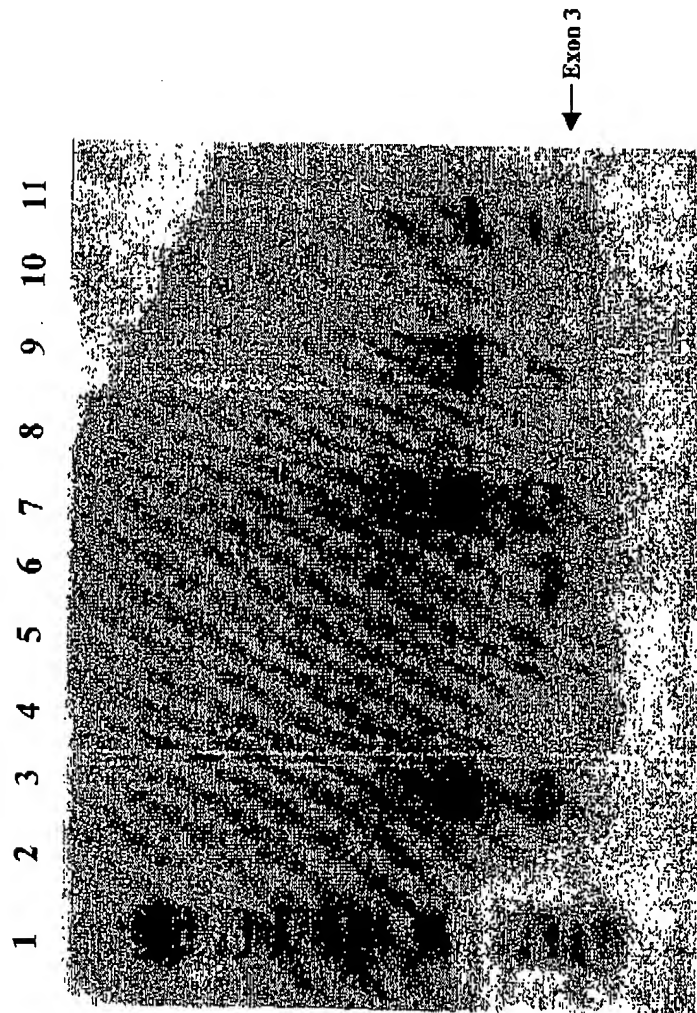


FIG. 8

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HISTOPLASMA CAPSULATUM CHITIN  
SYNTHASE SEQUENCES AND THEIR USE FOR  
DETECTION OF HISTOPLASMA  
CAPSULATUM AND HISTOPLASMOSIS  
Inventors: JOHNSON, et al.  
Express Mail No. EV 316331604 US

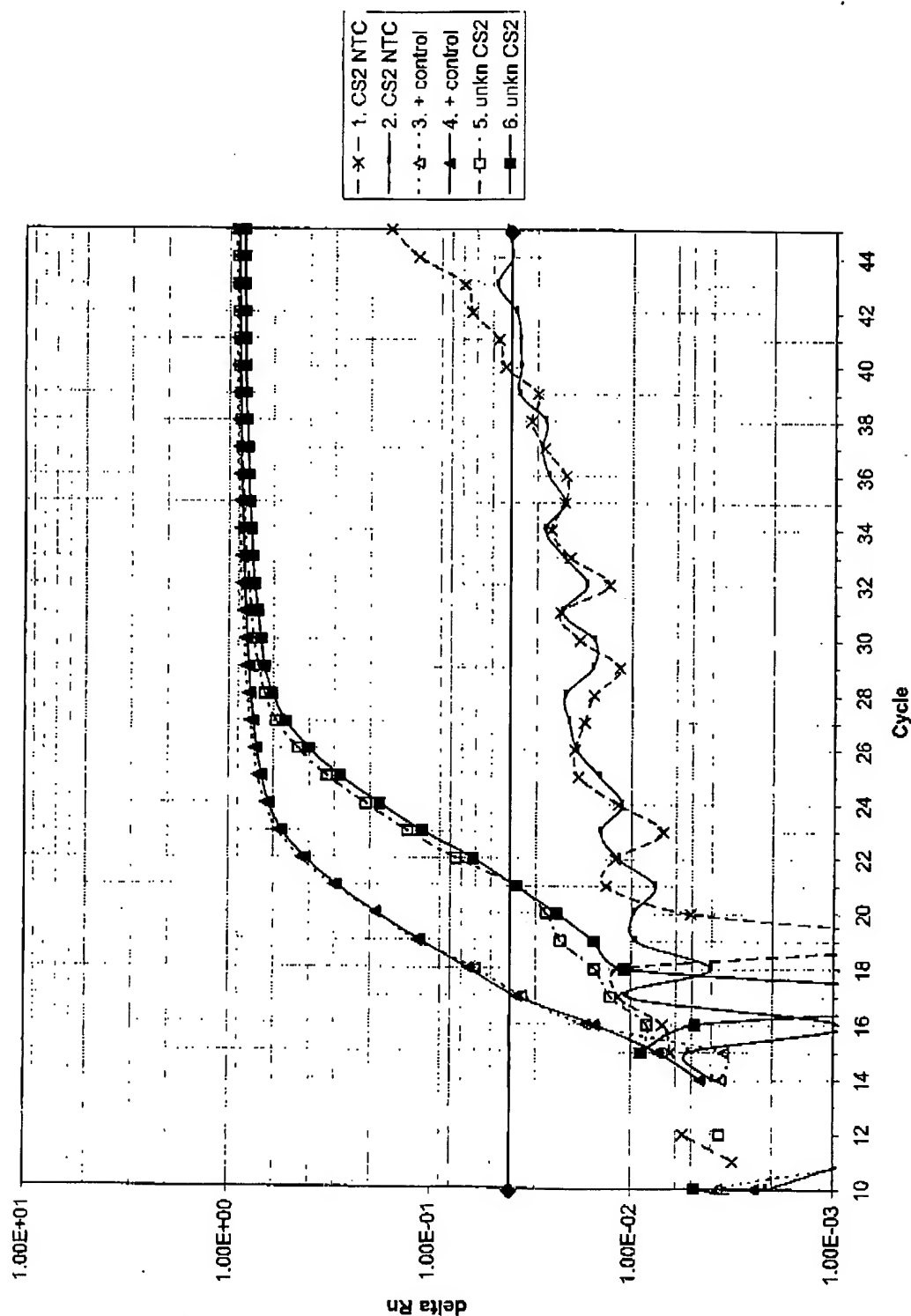


FIG 9A

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HISTOPLASMA CAPSULATUM CHITIN  
SYNTHASE SEQUENCES AND THEIR USE FOR  
DETECTION OF HISTOPLASMA  
CAPSULATUM AND HISTOPLASMOSIS  
Inventors: JOHNSON, et al.  
Express Mail No. EV 316331604 US

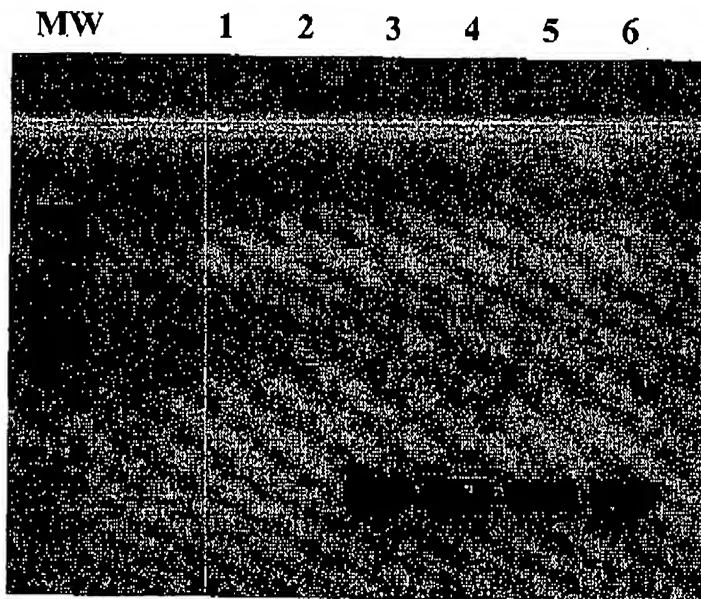


FIG. 9B

40715-294389  
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US Appl. Serial No. Unassigned  
TOPLASMA CAPSULATUM CHITIN  
SYNTHASE SEQUENCES AND THEIR USE FOR  
DETECTION OF HISTOPLASMA  
CAPSULATUM AND HISTOPLASMOSIS  
Inventors: JOHNSON, et al.  
Express Mail No. EV 316331604 US

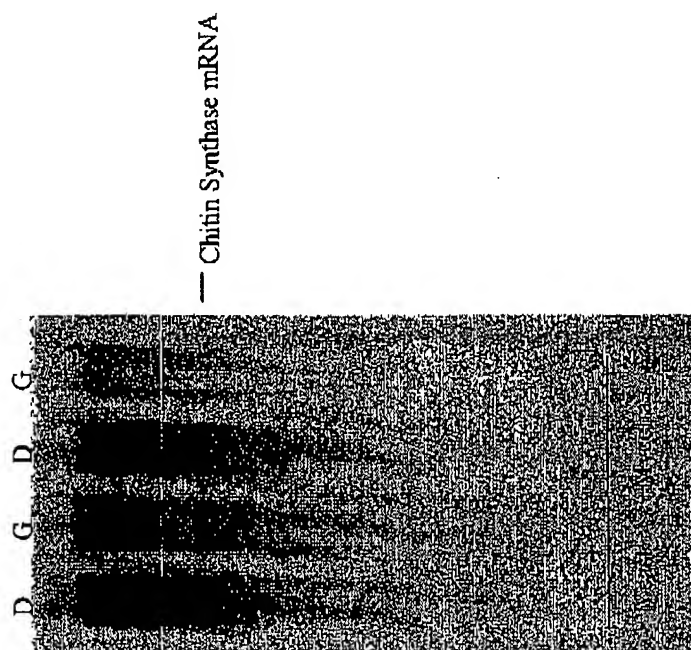


FIG. 10



US Appl. Serial No. Unassigned  
HISTOPLASMA CAPSULATUM CHITIN  
SYNTHASE SEQUENCES AND THEIR USE FOR  
DETECTION OF HISTOPLASMA  
CAPSULATUM AND HISTOPLASMOSIS  
Inventors: JOHNSON, et al.  
Express Mail No. EV 316331604 US

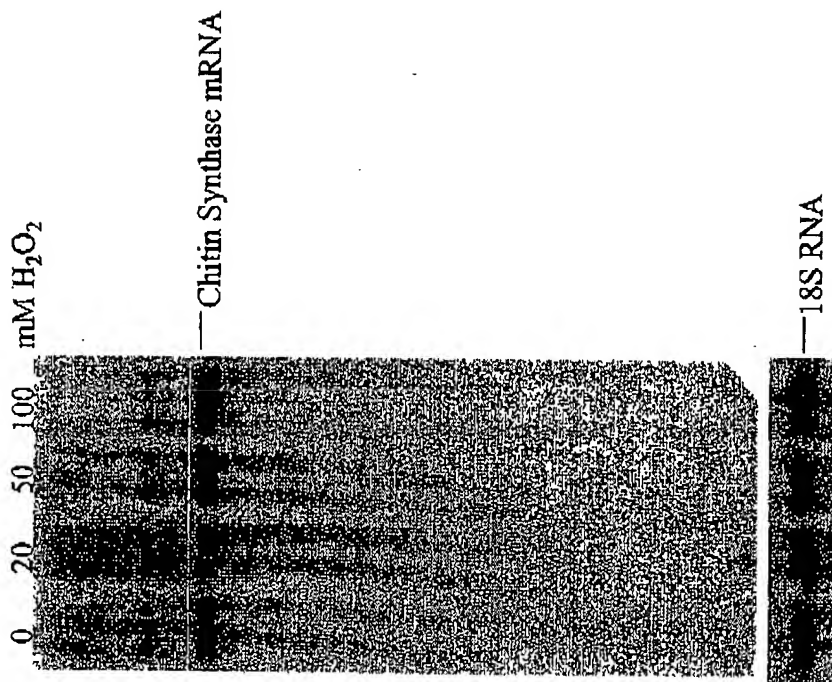


FIG. 11

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